CLAIMS

1. An auto-enrichener for an all terrain vehicle, comprising:

an enriching conduit for carrying fuel and air to an engine;

a valve disposed in said conduit, said valve being adjustable between at least an open configuration and a closed configuration, wherein in said open configuration passage of fuel and air through said conduit is enabled, and in said closed configuration passage of fuel and air through said conduit is not enabled;

a thermal expansion element in communication with said valve, wherein said thermal expansion element expands with increasing temperature and contracts with decreasing temperature, said thermal expansion element actuating said valve such that when said thermal expansion element is at a first temperature said valve is in said open configuration, and when said thermal expansion element is at a second temperature greater than said first temperature said valve is in said closed configuration;

a heater in thermal communication with said thermal expansion element.

2. The auto-enrichener of claim 1, wherein:

said thermal expansion element comprises a liquid portion disposed within a flexible solid portion, and wherein said liquid portion expands with increasing temperature and contracts with decreasing temperature.

3. The auto-enrichener of claim 2, wherein:

said liquid portion comprises silicone.

4. The auto-enrichener of claim 2, wherein:

said flexible solid portion comprises wax.

5. The auto-enrichener of claim 1, wherein:

said heater is an electric heater.

6. The auto-enrichener of claim 1, wherein:

said heater is in communication with said engine such that said heater heats said thermal expansion element when said engine is running, and said heater does not heat said thermal expansion element when said engine is not running.

7. The auto-enrichener of claim 1, wherein:

said valve comprises a valve plug movably engaged with said thermal expansion element so as to be movable between open closed positions;

wherein when said valve plug is in said open position said valve is in said open configuration, and when said valve plug is in said closed position said valve is in said closed configuration; and

said thermal expansion element actuates said plug between said open and closed positions so as to actuate said valve between said open and closed positions.

8. The auto-enrichener of claim 7, wherein:

said valve comprises a valve rod engaged with said valve plug and said thermal expansion element, such that when said thermal expansion element expands said rod is actuated such that said plug is translated toward said closed position, and when said thermal expansion element contracts said rod is actuated such that said plug is translated toward said open position.

9. The auto-enrichener of claim 1, wherein:

said valve is adjustable between said open and closed configuration and at least one intermediate configuration, wherein in said intermediate configuration passage of fuel and air through said conduit is enabled, and a rate of passage of fuel and air through said conduit when said valve is in said intermediate configuration is less than a rate of passage of fuel and air through said conduit when said valve is in said open configuration; and

when said thermal expansion element is at a third temperature greater than said first temperature and less than said second temperature, said valve is in said intermediate configuration.

10. An all terrain vehicle comprising the auto-enrichener of claim 1.

11. A method for controlling engine enrichment in an all-terrain vehicle, comprising:

providing an enriching conduit for carrying fuel and air to an engine;

providing a valve disposed in said conduit, said valve being adjustable between at least an open configuration and a closed configuration, wherein in said open configuration passage of fuel and air through said conduit is enabled, and in said closed configuration passage of fuel and air through said conduit is not enabled;

providing a thermal expansion element in communication with said valve, wherein said thermal expansion element expands with increasing temperature and contracts with decreasing temperature, said thermal expansion element actuating said valve such that when said thermal expansion element is at a first temperature said valve is in said closed configuration, and when said thermal expansion element is at a second temperature greater than said first temperature said valve is in said open configuration;

providing a heater in thermal communication with said thermal expansion element;

heating said thermal expansion element with said heater when said engine is running, and not heating said thermal expansion element when said engine is not running, such while said vehicle is running said valve is actuated toward said closed configuration, and while said vehicle is not running said valve is actuated toward said open configuration.

12. The method of claim 11, wherein:

said thermal expansion element comprises a liquid portion disposed within a flexible solid portion, and wherein said liquid portion expands with increasing temperature and contracts with decreasing temperature.

13. The method of claim 12, wherein:

said liquid portion comprises silicone.

14. The method of claim 12, wherein:

said flexible solid portion comprises wax.

15. The method of claim 11, wherein:

said heater is an electric heater.

16. The method of claim 11, wherein:

said heater is in communication with said engine such that said heater heats said thermal expansion element when said engine is running, and said heater does not heat said element when said engine is not running.

17. The method of claim 11, wherein:

said valve comprises a valve plug movably engaged with said thermal expansion element so as to be movable between open closed positions;

wherein when said valve plug is in said open position said valve is in said open configuration, and when said valve plug is in said closed position said valve is in said closed configuration; and

said thermal expansion element actuates said plug between said open and closed positions so as to actuate said valve between said open and closed positions.

18. The method of claim 17, wherein:

said valve comprises a valve rod engaged with said valve plug and said thermal expansion element, such that when said thermal expansion element expands said rod is actuated such that said plug is translated toward said closed position, and when said thermal expansion element contracts said rod is actuated such that said plug is translated toward said open position.

19. The method of claim 11, wherein:

said valve is adjustable between said open and closed configuration and at least one intermediate configuration, wherein in said intermediate configuration passage of fuel and air through said conduit is enabled, and a rate of passage of fuel and air through said conduit when said valve is in said intermediate configuration is less than a rate of passage of fuel and air through said conduit when said valve is in said open configuration; and

when said thermal expansion element is at a third temperature greater than said first temperature and less than said second temperature, said valve is in said intermediate configuration.